News and Views from the Literature

HIV Prevention

Circumcision and HIV: The Jury Is In!

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In many parts of the world, HIV remains an uncontrolled pandemic, despite the availability of antiretroviral therapy for infected individuals. Most researchers believe that a truly effective vaccine will not be available for many years. Many clinicians and a number of researchers have suggested that male circumcision might reduce the risk of HIV. Certainly dozens of studies have found the prevalence of HIV to be significantly higher in uncircumcised men than in those who are circumcised. A number of plausible mechanisms for protection in circumcised males have been suggested. These involve density of HIV target cells in the mucosal surface of the human foreskin, poor hygiene, a greater incidence of ulcerative sexually transmitted infections, and the susceptibility of the foreskin to abrasions. However, adoption of widespread male circumcision for protection against HIV infection, although promising, remained controversial, and more and better data from clinical trials were necessary before general implementation of circumcision as a preventative strategy could be adopted. That evidence is now available in the form of 2 recently published randomized controlled trials in Kenya and Uganda (Figure 1).

Male Circumcision for HIV Prevention in Young Men in Kisumu, Kenya: A Randomized Controlled Trial

Bailey RC, Moses S, Parker CB, et al.
Lancet. 2007;369:643-656.

The investigators randomly assigned 2784 men aged 18 to 24 years in Kisumu, Kenya, to an intervention group (circumcision, n = 1391) or a control group (delayed circumcision, n = 1393). The men were assessed by medical examination, HIV testing, and behavioral interviews for up to 24 months. The trial was stopped early in December 2006 with a median length for follow-up of 24 months after a third interim analysis by the data and safety monitoring board. Twenty-two men in the intervention group and 47 in the control group tested positive for HIV when the study was stopped. The 2-year HIV incidence was 2.1% in the circumcision group and 4.2% in the control group ($P = .0065$). This corresponds to a reduction in the risk of acquiring an HIV infection of 53%. When the investigators adjusted for nonadherence to treatment and excluded 4 men found to be seropositive at enrollment, the protective effect of circumcision was 60%. Adverse events related to the intervention were few and resolved quickly. A concern that circumcised men would increase their risky behavior was not observed.

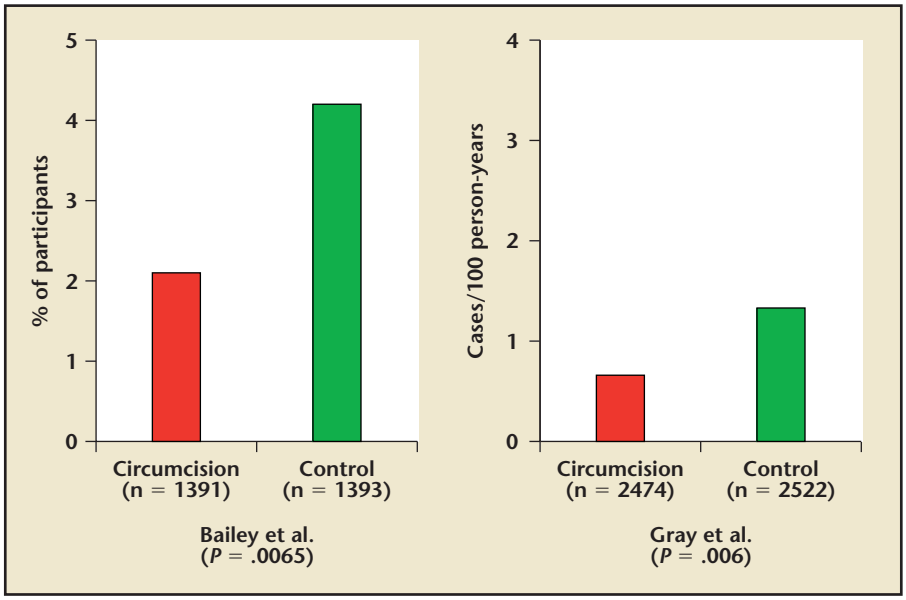

Figure 1. *Two-year HIV incidence in 2 randomized controlled trials of male circumcision as an HIV preventative strategy.*

Male Circumcision for HIV Prevention in Men in Rakai, Uganda: A Randomized Trial

Gray RH, Kigozi G, Serwadda D, et al.

Lancet. 2007;369:657-666.

The investigators randomly assigned 4996 uncircumcised HIV-negative men aged 15 to 49 to receive immediate circumcision (n = 2474) or circumcision delayed for 24 months (n = 2522). HIV testing, physical examination, and interviews were conducted for 24 months. In the modified intention-to-treat analyses, HIV incidence over 24 months was 0.66 cases/100 person-years in the intervention group and 1.33 cases/100 person-years in the control group (estimated efficacy of intervention was 51%; P = .006). The efficacy from the Kaplan-Meier time to HIV detection as-treated analysis was 60% (P = .003). Moderate to severe adverse events occurred in 3.6% of circumcisions but all resolved with treatment. Risk behaviors were the same in both groups during the follow-up period.

These 2 major and important studies have made the scientific case for going ahead with male circumcision as a life-saving strategy for tackling HIV. The power of this evidence and the multiple observational studies available certainly present a compelling case for the promotion of circumcision for HIV prevention in populations where circumcision is infrequently practiced and where HIV transmission is mainly due to heterosexual intercourse. The use of surgery for prevention of this disease will remain a controversial public health intervention, but there is no doubt that this practice could be especially important in areas of Africa where male circumcision rates are low and the HIV epidemic is most severe. At this time, the results of these studies cannot necessarily be extrapolated to the more developed countries where male circumcision is more common and HIV less prevalent. Cost and safety issues are of paramount importance in designing such a widespread preventative measure. Although there was no apparent increase in risk-taking behavior in those men circumcised, counseling will be necessary to counter an exaggerated belief in the protective effects of the procedure, which may lead to further risk behaviors that will counteract the beneficial effects of circumcision. It is important that the urologic community be in the forefront of implementing this strategy, which has been endorsed by the World Health Organization,[1] and assist in the development and subsequent teaching of effective, inexpensive, and safe methods of circumcision. We must understand, however, that male circumcision is a complementary rather than a competing strategy for tackling the HIV epidemic. ■

Reference

1. World Health Organization. WHO and UNAIDS announce recommendations from expert consultation on male circumcision for HIV prevention. Available at: http://www.who.int/hiv/mediacentre/news68/en/index.html. Accessed April 23, 2007.